

REMARKS

In the Office Action mailed December 15, 2004, the Examiner rejected claims 1-11 under 35 U.S.C. § 112 as being indefinite and rejected claims 1-11 under 35 U.S.C. § 103(a) as being unpatentable over Meyer (DE 19744649) and/or Orwar *et al.* (U.S. 6,445,393). Claims 12-18 were previously withdrawn in response to a restriction requirement.

In the instant amendment, the Applicants amend claims 1-11 for clarity. Claim 2 has been amended to the independent form and new claims 19 and 20 have been added. The present amendments do not change the scope of the claim limitations. As such the amendment is not made for reasons relating to patentability, but only to matters of form for expediting prosecution of the application.

The rejection based on 34 U.S.C. § 112 is respectfully traversed. The parenthetical reference to “giga ohm” has been eliminated in order to comply with conventional claim drafting format, however, it is respectfully submitted that a person of ordinary skill in the art of patch clamping would clearly understand the reference to a “high resistance seal.” Such a seal with the cell membrane on located on the tip of the patch clamping pipette is a well known basic requirement for the patch clamping technique. The seal is also alternatively referred to in the art as a “gigaseal” or “giga ohm seal.” See, for example, Patch Clamping: An Introductory Guide to Patch Clamp Electrophysiology, by Areles Molleman. The other objections regarding the form of the claims have been obviated by the amendments made herein. In particular, claim 2 has been amended to more clearly be an independent claim and the steps have been more positively recited by eliminating the “causing” recitation. For these reasons, it is submitted that the rejection under § 112 may be withdrawn.

Claims 1-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Meyer and/or Orwar *et al.* This rejection is respectfully traversed. With respect to Meyer, the Examiner cites to DE 197 44 649 A1. This reference and the subsequently filed corresponding PCT application (WO 99/19729) were published in April 1999. The Applicants also bring to the Examiner’s attention a corresponding U.S. application that matured into U.S. patent, U.S. Patent no. 6,379,916, on April 30, 2002. The effective date of the corresponding U.S. patent is even later—May 30, 2000. The instant application is based on a PCT application (PCT/GB99/04073), which claims to priority to three GB applications, all of which predate the earliest effective date of the Meyer reference (i.e., No. 9826742.0 filed December 5, 1998, No. 9906053.5 filed March 17, 1999 and No.

9905998.2 filed March 17, 1999). For this reason Meyer does not render the claims obvious. Moreover, Meyer does not disclose, *inter alia*, the formation of a cell layer as an air liquid interface as recited in the claims of the instant application. For all these reasons, the claims of the instant application are patentable over Meyer

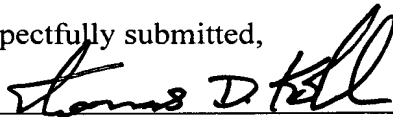
With respect to Owar, it is also believed that this U.S. patent is not effective as a reference because its international filing date is prior to November 29, 2000 and therefore the earliest effective date under 102(e) is its actual U.S. filing date of December 2, 1999. (See MPEP 2136). Again, all three priority dates of the instant application are prior to that date. Moreover, regardless of the effective date of Owar, it does not disclose the instantly claimed invention.

Owar discloses a system utilizing traditional patch clamping techniques in combination with a separate electrophoresis separation capillary 1 (see FIG. 2). As described, the tip 7 of the patch clamp electrode 8 holds patch-clamped cell 9. (See col. 13, lins 20-45). There is no discussion whatsoever as to how the cell is attached to the patch clamp electrode, which is the focus of the claims of the instant application. Reference is made to the seminal article by P. O. Hamil et al. (Pflug Arch. 391:85, 1981) for discussion of the basic patch clamping technique. (Col 10, lins 63-64). Thus, with respect to the patch clamping aspects of this disclosure, it is the same as the general state of the art discussed in the background of the present invention. That is a hand manipulated technique that requires high operator skill and is slow to effect. In particular, there is no disclosure of a liquid cell interface, a layer of cells at such an interface or moving of a capillary tube and/or pipette along an axis. For these reasons, Owar alone or in combination with Meyer does not teach the present invention.

In view of the foregoing remarks it is believed that the application is now in form for examination on the merits and an early and favorable office action is earnestly solicited.

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Respectfully submitted,



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